**Roadmap to the Fusion Energy Economy**

**Stellar Energy Foundation**

It is widely agreed that the planet is near or actually in a crisis due to rapidly accelerating climate change. If global warming is not stopped very soon, the worldwide rise in average temperature will bring catastrophic numbers of extreme weather events and widespread flooding.

It is also widely agreed that one important element is addressing this warming is to significantly cut back the emission of carbon dioxide (CO2), a greenhouse gas which is produced when fossil fuels are burnt. This means it is very important to ramp up the use of conventional “green energy” sources, such as solar and wind power, and hydroelectric generation. In addition to these generally recognized important steps to reducing CO2, there have been some improvements in the safety of nuclear fission power generation. However, the safety issues and the issues of long-term radioactive waste storage have not yet been overcome. And many estimates show that wind and solar do not have the capacity to provide enough energy to supply the growing needs of the industrialized world.

There is, on the other hand, a virtually “perfect” solution to the clean production of energy on a scale that would have the capacity to power the whole world.

This technology is fusion energy.

Fusion energy is the production of nuclear energy without any of the shortcomings of nuclear fission (conventional “atomic energy”). Fusion consists of engineering a system that causes small nuclei, such as hydrogen, to fuse together, releasing significant carbon free energy in the process. Fusion energy has the following features, which make it a highly attractive energy source:

1. The fuel is readily available from sea water
2. There is no chance of any diversion of fuel or other elements of this technology into weapons; thus, the power systems could be built and located anywhere in the world with no issues of terrorism
3. There are no long-term radioactive waste products requiring storage; thus the power systems could be used anywhere.
4. The power systems would be intrinsically safe from catastrophic failure, such as is a concern in conventional atomic power systems. No public safety issues would exist for people living near fusion power plants.

The road to the development of workable fusion energy has been a long one so far, paved with many advances but also many false-steps. This has given fusion energy a reputation for being impractical.

We are now at a moment when the whole field is poised to accelerate, and there are several projects which have realistic prospects of reaching technical feasibility in 5-10 years.

These important breakthroughs capitalize on advances in materials, artificial intelligence and parallel computing and automated production technology, and have resulted in the formation and funding of over 25 commercial start-up companies, founded and managed by highly dedicated and energetic entrepreneurs. These breakthroughs completely change the prospects for fusion energy’s planning timeframe. Collectively, these companies have raised over $1 billion and are moving forward rapidly towards demonstrating the fundamental soundness of their ideas.

The Stellar Energy Foundation, a non-profit entity, is hosting a workshop at the Flatiron Institute in New York City on June 13th to feature representatives of many of the start-up companies, some national laboratories and university groups who have been advancing fusion science and technology with government funding, both within the USA and internationally. The Workshop will discuss the economic cost of fusion power, and map a path forward to accurate estimates of what fusion energy will cost.

The Workshop will also feature representatives of the funding community: Wall Street, private equity, large-scale philanthropy and government funding agencies who are promoting public-private-philanthropic partnerships to accelerate development of fusion energy.

The future economics of the fusion power sector poses another key challenge. The workshop will discuss this directly and map a path forward to accurate estimates of what fusion energy will cost. Hear the responses and plans of the commercial players to the cost issues.

The purpose of Stellar Energy Foundation is education and advocacy and advancement of fusion energy. The workshop is offered for people and entities who could be important to emerging fusion energy community. There will be no soliciting of funds.

Join us on June 13th at the Roadmap to the Fusion Power Economy, which will be held at the Flatiron Institute (an internal research division of the Simons Foundation), 162 Fifth Avenue, New York, NY 10010.

Workshop Sponsor: Workshop Co-Host:

Stellar Energy Foundation Fusion Industry Associates

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